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[54] **HIGH ISOLATION DUAL POLARIZED ANTENNA SYSTEM USING DIPOLE RADIATING ELEMENTS**

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[56] References Cited

U.S. PATENT DOCUMENTS

4,446,465	5/1984	Donovan	343/797
5,629,713	5/1997	Mailandt et al.	343/817

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[57] **ABSTRACT**

An antenna for receiving electromagnetic signals comprises a ground plane with a length and having a vertical axis along the length. A plurality of dipole radiating elements, the radiating elements are comprised of first and second co-located, orthogonal dipoles, the dipoles are aligned at first and second predetermined angles with respect to the vertical axis, the radiating elements and ground plane produce first electromagnetic fields in response to said electromagnetic signals. A plurality of supports, the supports are connected to the ground plane and perpendicular to the vertical axis and placed between selected of the plurality of dipole radiating elements. A plurality of metallic parasitic elements are placed in a selected of said plurality of supports, the first electromagnetic fields exciting currents in said metallic parasitic elements, the currents creating second electromagnetic fields, the second electromagnetic fields canceling with portions of the first electromagnetic fields.

29 Claims, 8 Drawing Sheets